

WHAT IS CLAIMED IS:

Sub
A27

1. An end mill grinder for grinding an end mill having a plurality of primary and secondary clearances, the end mill grinder comprising:

a first grinding wheel for grinding the primary clearances of the end mill;

a second grinding wheel for grinding the secondary clearances of the end mill, said second grinding wheel located adjacent to said first grind wheel;

means for rotating said first grinding wheel;

means for rotating said second grinding wheel;

a carriage located adjacent to said first and second grinding wheels;

a finger guide attached to the carriage;

an end mill retainer for holding the end mill, said end mill retainer attached to the carriage;

whereby said finger guide guides the end mill moving towards said first and second grinding wheels to simultaneously allow said first grinding wheel to grind the primary clearances and said second grind wheel to grind the secondary clearances of the end mill.

2. The end mill grinder of claim 1, wherein a position of said carriage is adjustable in relation to said first and second grinding wheels.

3. The end mill grinder of claim 1, wherein said carriage is rotatable, thereby allowing the end mill to be positioned on said finger guide prior to contacting said first and second grinding wheels.

4. The end mill grinder of claim 1, wherein the end mill retainer allows rotational and longitudinal movement of the end mill in relation to said first and second grinding wheels.

5. The end mill grinder of claim 1, further comprising means for independently adjusting a position of the first grinding wheel.

6. The end mill grinder of claim 1, further comprising means for independently adjusting a position of the second grinding wheel.

7. The end mill grinder of claim 1, wherein said means for rotating said first grinding wheel includes:

a motor;

a spindle attached to said first grinding wheel; and

a belt assembly attached to the motor and the spindle,
the belt assembly allowing the motor to drive the spindle.

8. The end mill grinder of claim 1, wherein said means for rotating said first grinding wheel includes a motor for rotationally driving said first grinding wheel.

9. The end mill grinder of claim 1, wherein said means for rotating said second grinding wheel includes:

a motor;

a spindle attached to said second grinding wheel; and

a belt assembly attached to the motor and the spindle,
the belt assembly allowing the motor to drive the spindle.

10. The end mill grinder of claim 1, wherein said means for rotating said second grinding wheel includes a motor for rotationally driving said second grinding wheel.

11. The end mill grinder of claim 1, wherein said first and second grinding wheels are constructed of diamond.

12. The end mill grinder of claim 1, wherein said first and second grinding wheels are constructed of borazon.

13. The end mill grinder of claim 1 wherein said first grinding wheel is rotated in an opposite direction to said second grinding wheel.

whereby the finger guide guides the end mill to simultaneously allow the first grinding wheel to grind the primary clearances and the second grinding wheel to grind the secondary clearances of the end mill.

15. The end mill grinder of claim 14 wherein the means for rotating said first grinding wheel includes:

a motor;
a spindle attached to said first grinding wheel; and
a belt assembly attached to the motor and the spindle,
the belt assembly allowing the motor to drive the spindle.

16. The end mill grinder of claim 14 wherein the means for rotating said second grinding wheel includes:

a motor;
a spindle attached to said second grinding wheel; and
a belt assembly attached to the motor and the spindle,
the belt assembly allowing the motor to drive the spindle.

17. A method of grinding a plurality of primary clearances and secondary clearances of an end mill in one grinding process, said method comprising the steps of:

adjusting a position of a first grinding wheel in relation to a second grinding wheel, said position allowing an outer edge of the first grinding wheel to grind the primary clearance of the end mill and an outer edge of the second grinding wheel to grind the secondary clearance of the end mill;

affixing the end mill to a carriage having a finger guide;

rotating the first and second grinding wheels;

rotationally and horizontally translating the end mill to contact the rotating first and second grinding wheels, the first grinding wheel grinding the primary clearances and the second grinding wheel grinding the secondary clearances of the end mill.

Sub
a37

14. An end mill grinder for grinding an end mill having a plurality of primary and secondary clearances, the end mill grinder comprising:

a first grinding wheel for grinding the primary clearances of the end mill;

a second grinding wheel for grinding the secondary clearances of the end mill, said second grinding wheel located adjacent said first grinding wheel;

means for rotating said first grinding wheel;

means for rotating said second grinding wheel;

means for independently adjusting a position of the first grinding wheel;

means for independently adjusting a position of the second grinding wheel;

a carriage located adjacent to said first and second grinding wheels, said carriage having a finger guide and being rotatable to allow the end mill to be positioned on said finger guide prior to contacting said first and second grinding wheels;

an end mill retainer attached to the carriage for holding the end mill, said retainer allowing rotation and horizontal movement of the end mill;